Calcul Téléportation.

$|\phi\rangle_1 = \alpha|0\rangle_1 + \beta|1\rangle_1$

$$\left(|B_{01}\rangle_{12}\langle B_{01}| \otimes I_3\right)\left(|\phi\rangle_1 \otimes |B_{00}\rangle_{23}\right)$$

$$= |B_{01}\rangle_{12}\left(\frac{{}_{12}\langle 01| + {}_{12}\langle 10|}{\sqrt{2}}\right) \otimes \left(|0\rangle_3\,{}_3\langle 01| + |1\rangle_3\,{}_3\langle 11|\right)$$

$$(\alpha|0\rangle_1 + \beta|1\rangle_1) \otimes \left(\frac{|00\rangle_{23} + |11\rangle_{23}}{\sqrt{2}}\right)$$

$$= |B_{01}\rangle_{12}\left(\alpha\,{}_2\langle 1| + \beta\,{}_2\langle 0|\right) \otimes \left(|0\rangle_3\,{}_3\langle 01| + |1\rangle_3\,{}_3\langle 11|\right)$$

$$\otimes \left(\frac{|00\rangle_{23} + |11\rangle_{23}}{\sqrt{2}}\right)$$

$$= |B_{01}\rangle_{12}\left(\alpha\,{}_2\langle 1| + \beta\,{}_2\langle 0|\right) \otimes \left(\frac{|0\rangle_2 \otimes |0\rangle_3 + |1\rangle_2 \otimes |1\rangle_3}{\sqrt{2}}\right)$$

$$= |B_{01}\rangle_{12} \otimes \left(\alpha|1\rangle_3 + \beta|0\rangle_3\right)$$

$$= |B_{01}\rangle_{12} \otimes \left(\beta|0\rangle_3 + \alpha|1\rangle_3\right)$$

$X|\phi\rangle_3$ ou $X = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$.

(porte NOT)